

# microATX Chassis Checklist

Version 1.1

---

# Contents

---

<b>1</b>	<b>Chassis Features Description .....</b>	<b>5</b>
<b>2</b>	<b>General Chassis Information .....</b>	<b>5</b>
<b>3</b>	<b>I/O Shield Aperture Features .....</b>	<b>6</b>
<b>4</b>	<b>Motherboard Mounting Features .....</b>	<b>8</b>
<b>5</b>	<b>Motherboard Component Height Restrictions .....</b>	<b>9</b>
<b>6</b>	<b>Power Supply Mounting Features .....</b>	<b>11</b>
<b>7</b>	<b>Thermal Features .....</b>	<b>13</b>
<b>8</b>	<b>EMI Considerations .....</b>	<b>13</b>

## **REVISION HISTORY**

Changes from Version 1.0 to Version 1.1

Introduction – updated the Web site URL.

Section 5 – Increase in the maximum component height restriction. Zones C, D, and E formerly specified three different height restrictions. This revision replaces those three zones (C, D, and E) with one maximum component height restriction zone (C) for the entire region. Figure 3 has been updated to reflect this change.

Sections 7 and 8 – Removed former Section 7 (PC 98 Recommendations) and renumbered the two sections that followed.

## **IMPORTANT INFORMATION AND DISCLAIMERS**

THIS CHECKLIST IS PROVIDED "AS IS" WITH NO WARRANTIES WHATSOEVER, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY WARRANTY OTHERWISE ARISING OUT OF ANY PROPOSAL, SPECIFICATION OR SAMPLE.

Information in this document is provided in connection with Intel products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by the sale of Intel products. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel products are not intended for use in medical, life-saving, or life-sustaining applications.

Intel retains the right to make changes to its test specifications at any time, without notice. The hardware vendor remains solely responsible for the design, sale, and functionality of its product, including any liability arising from product infringement or product warranty.

Copyright © 2002 Intel Corporation. All rights reserved.

Version 1.1, June 2002

† Other product and corporate names may be trademarks or registered trademarks of other companies, and are used only for explanation and to the owners' benefit, without intent to infringe.



**Vendor:** \_\_\_\_\_

**Model:** \_\_\_\_\_

**Date:** \_\_\_\_\_

This checklist is intended to serve as a quick reference for determining compliance to the microATX specification. This is not intended to be a comprehensive process but rather to spot check some critical dimensions.

References are from revision 1.1 of the *microATX Motherboard Interface Specification*. For the latest version of the specification, see the Web site: <http://www.formfactors.org>

## 1 Chassis Features Description

---

The checklist features are divided in three categories:

(R) = Required feature

(O) = Optional feature

(I) = Informational feature

## 2 General Chassis Information

---

(I) Overall height of unit (includes feet) \_\_\_\_\_

(I) Overall width of unit \_\_\_\_\_

(I) Overall depth of unit \_\_\_\_\_

(I) Number of 3.5" drive bays \_\_\_\_\_

(I) Number of 5.25" drive bays \_\_\_\_\_

(I) Number of total add-in slots \_\_\_\_\_

### 3 I/O Shield Aperture Features

---

See Figure 1.

(R) I/O Aperture Width	6.250±0.008" [158.75±0.2 mm]	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Actual _____
(R) I/O Aperture Height	1.750±0.008" [44.45±0.2 mm]	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Actual _____
(R) I/O Aperture Keepout Area	0.100" Min. [2.54 mm]	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Actual _____
(R) I/O Aperture Corner Radius	0.039" Max. Typ. [0.99 mm]	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Actual _____
(R) Motherboard Standoffs to I/O Aperture	0.086±0.010" [2.18±0.25 mm]	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Actual _____
(R) Relationship to Datum B - Width	2.096±0.010" [53.24±0.25 mm]	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Actual _____
(R) Relationship to Datum B - Depth	0.483±0.010" [12.27±0.25 mm]	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Actual _____
(R) Sheetmetal Thickness at I/O Aperture	0.037" to 0.052" [0.94 mm to 1.32 mm]	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Actual _____

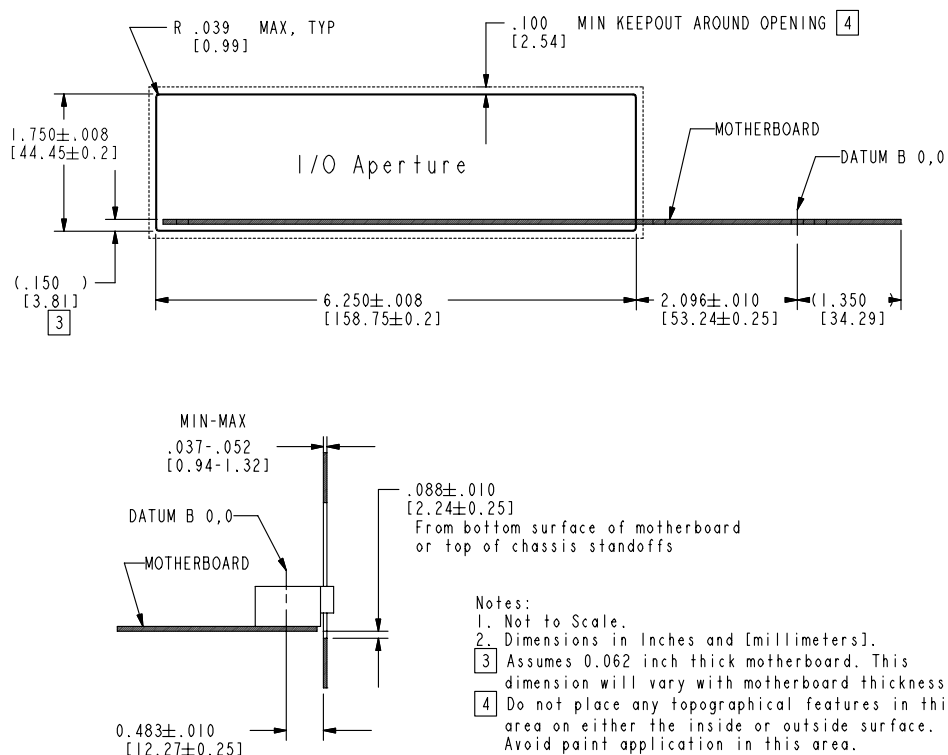
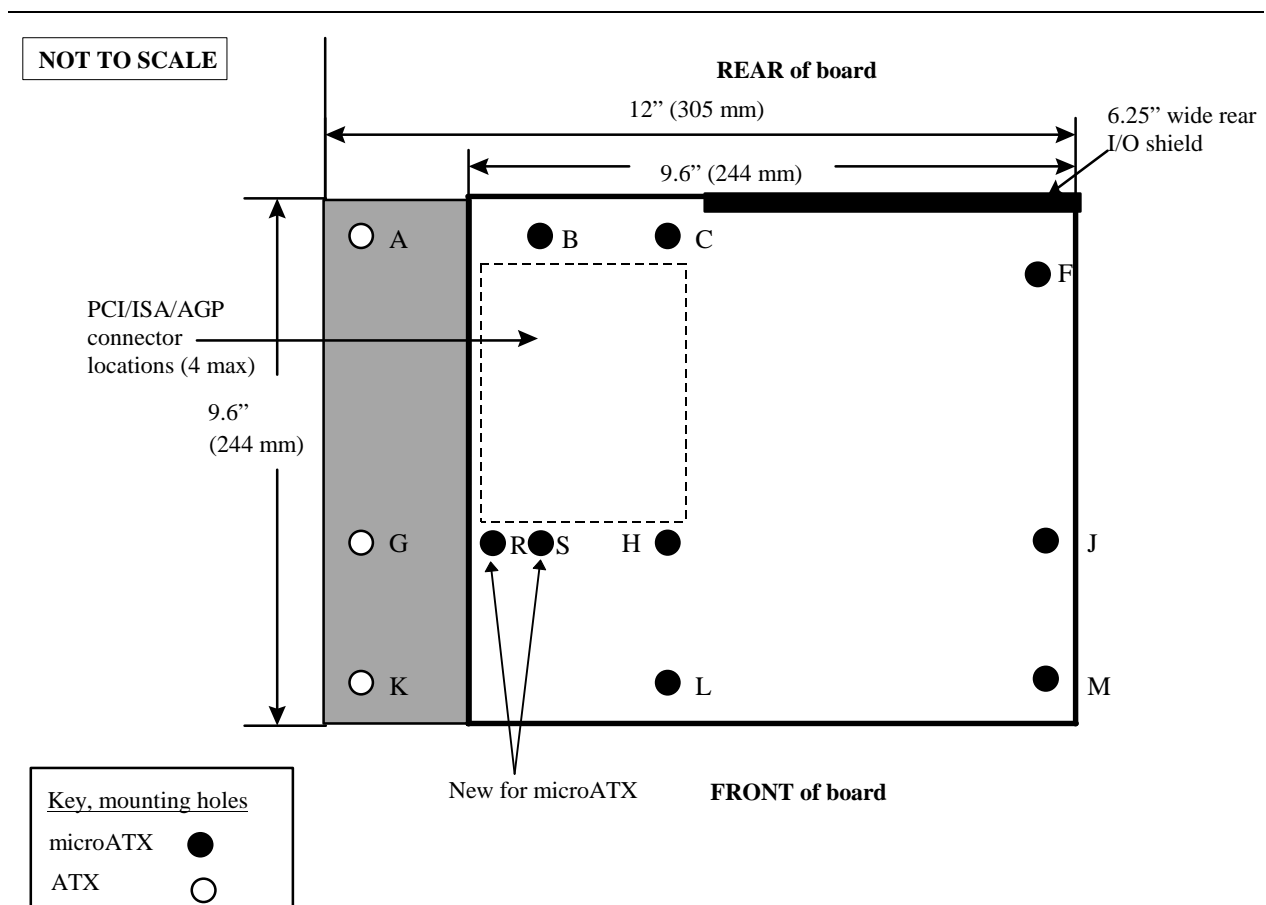


Figure 1: I/O Aperture Measurements

## 4 Motherboard Mounting Features

See Figure 2.

- |     |  |     |                          |    |                          |
|-----|--|-----|--------------------------|----|--------------------------|
| (R) | Features for mounting microATX motherboard (see Figure 2)  | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (I) | Features for mounting ATX motherboard (see Figure 2)       | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (I) | Features for mounting miniATX motherboard (see ATX spec.)  | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (R) | No obstructions to mounting microATX motherboard           | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (R) | Mounting hole “S” is implemented with a removable standoff | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (R) | Add-in card slots align with microATX motherboard          | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (I) | Notes, mounting features:                                  |     |                          |    |                          |



### Figure 2: Motherboard Mounting Features



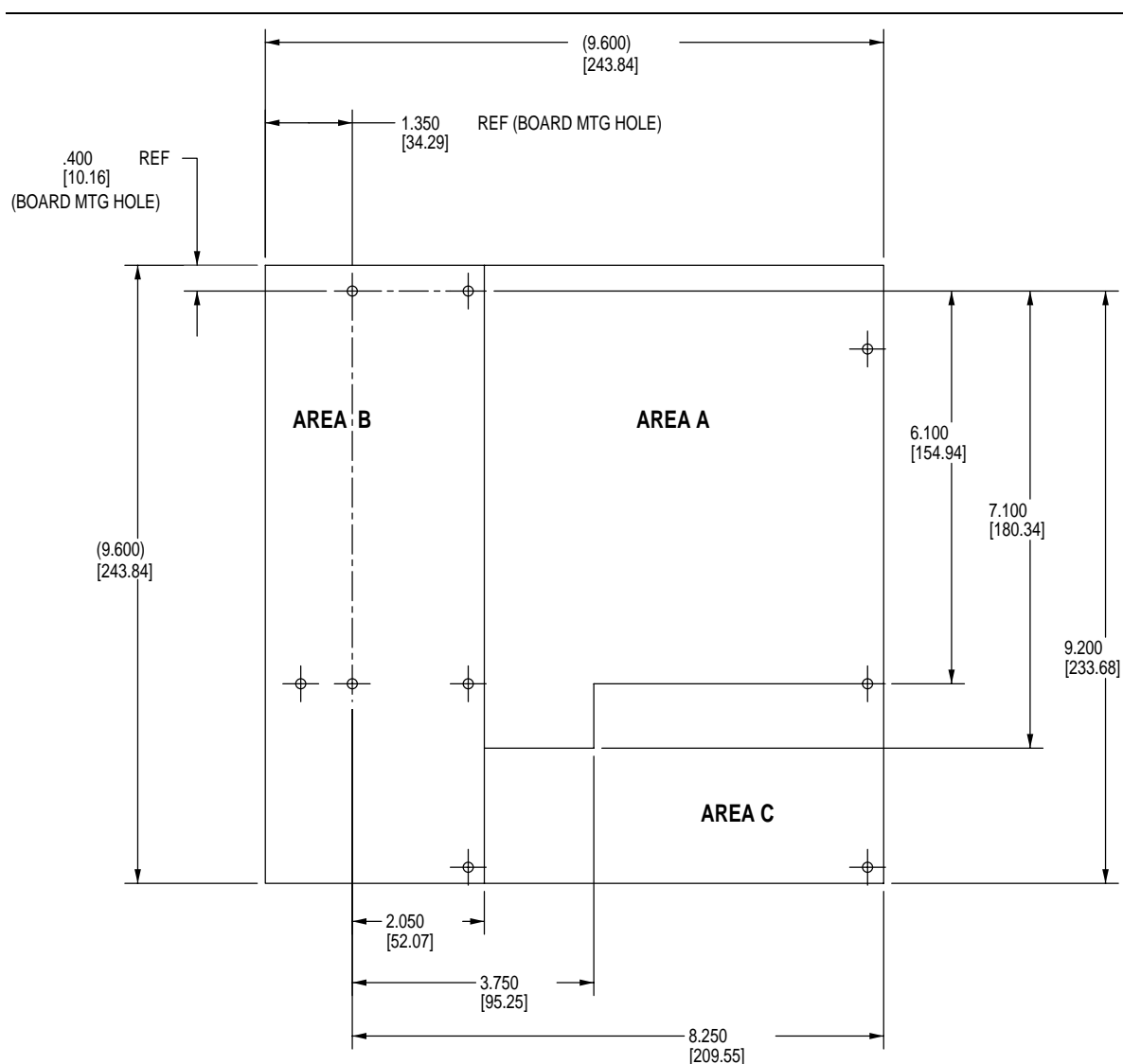
## 5 Motherboard Component Height Restrictions

---

See Figure 3.

Primary board side. These are component heights; the chassis should leave room for dynamic excursion (i.e., vibration and shock during shipping).

- |     |  |                       |     |                          |    |                          |
|-----|--|-----------------------|-----|--------------------------|----|--------------------------|
| (R) | Maximum component height in Zone “A”   | 2.80 inches [71.12mm] | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (R) | Required chassis clearance in Zone “A” | 3.00 inches [76.20mm] | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (O) | recommended:                           | 3.50 inches [88.90mm] | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (R) | Maximum component height in Zone “B”   | 0.60 inches [15.24mm] | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (R) | Maximum component height in Zone “C”   | 1.50 inches [38.10mm] | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |



Area	Maximum component height (in inches)
A	Motherboard component height, 2.80 inches [71.12mm] maximum Chassis clearance over motherboard, 3.0 inches [76.20mm] required Chassis clearance over motherboard, 3.5 inches [88.90mm] recommended
B	0.60 inches [15.24mm] (expansion slot area)
C	1.50 inches [38.10mm] (see Note)

Note: These component heights assume a PCB thickness of 0.062" [1.575mm].

**Figure 3: Height Restriction Areas**

## 6 Power Supply Mounting Features

---

See Figure 4 and Figure 5.

- |   |                              |                             |
|---|------------------------------|-----------------------------|
| (I) Chassis accepts ATX-style power supply                    | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (I) ATX: Features for internal mounting tab                   | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (I) ATX: Location of 4 external mounting holes (see Figure 4) | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (I) ATX: Adequate opening for rear vent and AC plug           | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (I) Chassis accepts SFX-style power supply                    | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (I) SFX: Features for internal mounting tab                   | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (I) SFX: Location of 3 external mounting holes (see Figure 5) | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (I) SFX: Adequate opening for rear vent and AC plug           | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| (I) Notes, power supply:                                      |                              |                             |

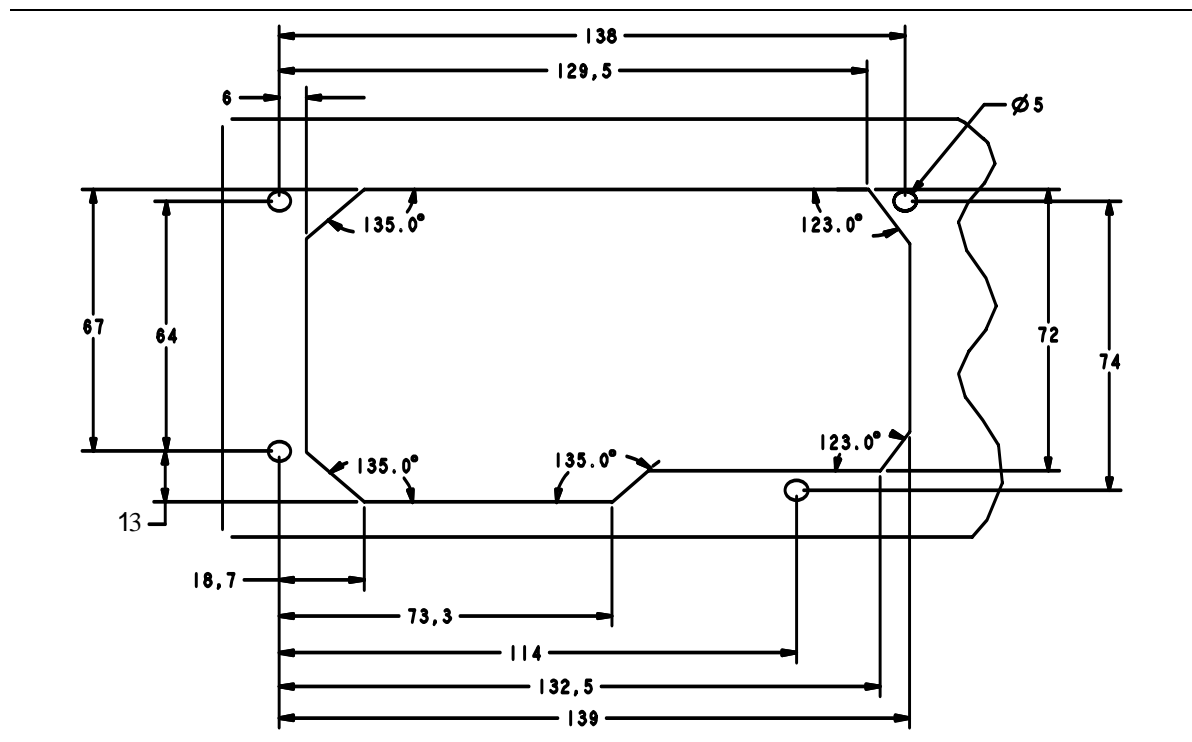


Figure 4: ATX Power Supply Mounting Holes

Notes:

1. Unless otherwise specified, all dimensions are in mm.

Tolerance:

Whole No.: XX +/- 1

Decimal No.: XX +/- 0.5

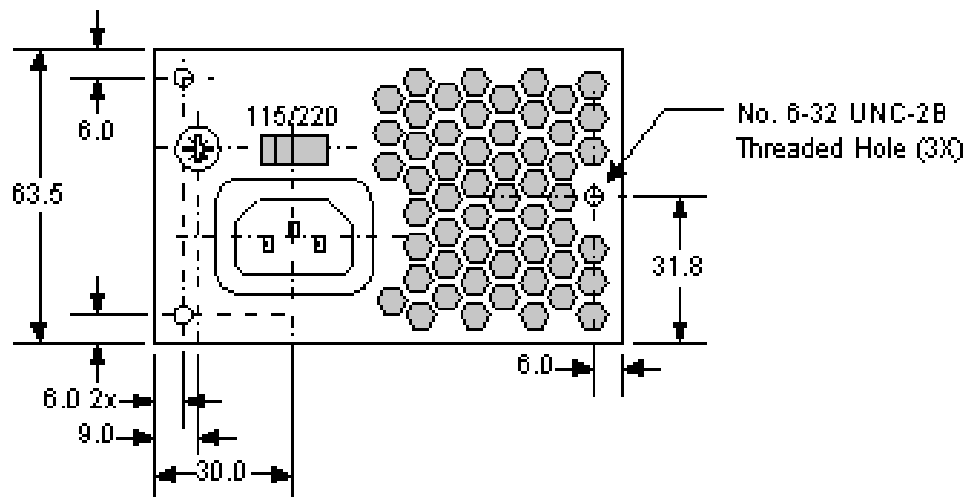


Figure 5: SFX Power Supply Mounting Holes

## 7 Thermal Features

---

- |     |  |     |                          |    |                          |
|-----|--|-----|--------------------------|----|--------------------------|
| (I) | Provision for optional secondary fan     | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (I) | Adequate venting in the front of chassis | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (I) | Adequate venting in the rear of chassis  | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (I) | Notes, thermal features:                 |     |                          |    |                          |

## 8 EMI Considerations

---

- |     |   |     |                          |    |                          |
|-----|---|-----|--------------------------|----|--------------------------|
| (I) | I/O shield provides contact between I/O ports and chassis | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (I) | Open external drive bays contain EMI shields              | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (I) | Filler panels of empty add-in card slots seated           | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (I) | Chassis seams have features to enhance grounding          | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (I) | Motherboard mounting features provide grounding           | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| (I) | Notes, EMI features:                                      |     |                          |    |                          |